Electronic Pipettor - 5mL
Pipette Electronique - 5mL
Elektronische Pipette - 5mL
Pipetta Elettronica - 5mL
Pipeteador electrónico - 5mL
エレクトロニック・ピペッタ - 5mL

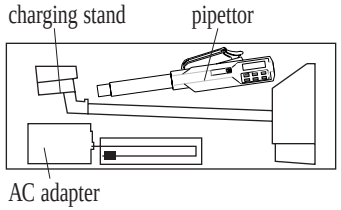
6483

FOD# 1210

Description

Each unit includes the following items:

- 1 Electronic Pipettor
- 1 Charging Stand
- 1 AC Adapter
- 1 Test Performance Certificate
- 1 Instruction Manual
- 1 Quick Reference Card
- Replacement Tip Cone Filters (50/bag)



Make sure that all items are included and that no damage has occurred during shipment. Also check that the AC adapter matches your electrical requirements.

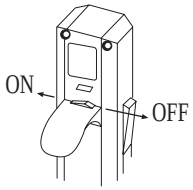
Pipettor Controls

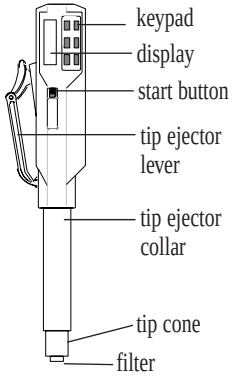
These controls are often referred to in this manual.

Speed Key	S▸	Changes aspiration and dispense speeds
Mode Key	M	Shifts to next mode
Up Key	▲	Increases open volume or speed
Down Key	▼	Decreases open volume or speed
Recall Key	*	Flips back to last mode entered
Enter Key	E	Selects mode, speed or volume changes
Start Button		Triggers all mechanical operations
Tip Ejector Lever		Squeezed to remove pipette tip

ON-OFF SWITCH

The On-Off Switch is located at the back of the pipettor. Slide to the left position to switch "ON" and to the right to switch "OFF".





Indications

The easy-to-use 3M Electronic Pipettor - 5mL is pre-programmed to perform the most common dilutions used with 3M™ Petrifilm™ Plates and 3M™ Redigel™ Tests. The self-calibrating, microprocessor-based system reduces the possibility of human error and instrument contamination by controlling pipetting speed, calibration and volume selection. It is a simple yet sophisticated instrument for handling micro-volumes of liquids with high accuracy and precision. Its light-weight and ergonomic controls take the effort out of pipetting to help reduce the risk of repetitive strain injuries that are frequent in manual pipetting.

The 3M Electronic Pipettor 5mL includes:

- Pre-programmed diluting, pipetting, and dispensing modes
- Self-calibrating, microprocessor-controlled system
- Full-grip; low-effort tip ejector
- Soft-touch operating button
- Open programming mode for user-set pipetting and diluting
- Recall button for selecting previous mode
- LCD screen for viewing speed, mode and volume
- 5 speeds for aspiration and dispensing
- Cordless operation
- Magnetic-mount recharging stand
- Replaceable NiMH battery
- Weighs less than 6 ounces
- Standard Methods for the Examination of Dairy Products (SMEDP) accuracy

Precautions

- Always follow Good Laboratory Practices.
- Avoid contamination of the tip cone. Do not rest the pipettor on its side. Always place the pipettor in the charging stand when not in use.
- Ensure consistent technique to maintain precise results.
- Never strike the pipettor tip cone against the tip tray when mounting tips. This can damage internal components.
- Avoid excessive shock to pipettor. Do not drop the pipettor, charging stand or AC adapter.
- Avoid exposing the unit to extreme temperature changes, humidity and dust.
- Avoid rough handling when using the unit. Moderate keystroke pressure is all that is required for all operating buttons.

Instructions For Use

Only use and store the pipettor in accordance with the following operating conditions:

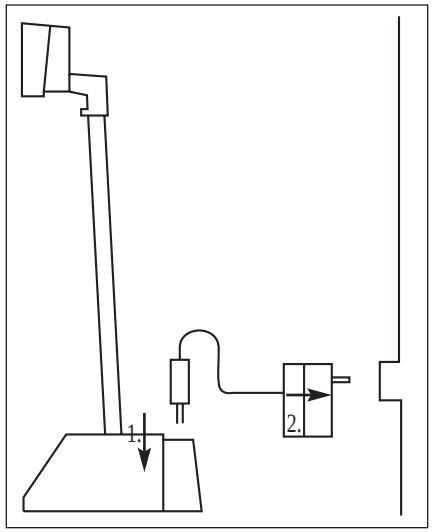
Condition	Range or Limit
Performance Testing Temperature	+19 to + 25°C
Mechanical Operating Temperature	+15 to + 35°C
Storage Temperature	-20 to + 40°C
Maximum Humidity	95%

The following recommendations should always be followed for best results:

1. During aspiration, hold the pipettor vertically. For greatest accuracy, the pipettor should never be tilted at an angle greater than 15° during aspiration.
2. During aspiration, consistently place the tip no deeper than 5mm into the liquid.
3. During dispensing, position the tip at least 5mm above the surface to prevent bubbles from forming.

Connecting the AC Adapter

- Be sure that the voltage rating of the AC adapter correctly corresponds to the voltage from the electrical outlet.
- Do not use electrical outlets that are timed or switched.
- Use only the AC adapter provided with the unit or an approved replacement from 3M.



Instructions For Use

1. Connect the AC adapter into the connector jack at the rear of the charging stand's base.
2. Plug the AC adapter into an AC electrical outlet.
3. The green light at the top of the charging stand indicates that the stand is in operation. The light will always be on when plugged in and operating properly.

Charging the Pipettor Battery

1. Switch the pipettor “ON” (see page 2).
2. Mount the pipettor into the charging stand. The top of the pipettor will fit snugly into the head of the charging stand. The magnetic mount will lock the pipettor into the proper charging position.
3. If the battery is new or has been allowed to fully discharge, keep the pipettor in the stand for 10 hours to fully charge the battery before continuing use.

- The unit will charge when “ON” or “OFF”. Leave the pipettor “ON” and in the charging stand when not in use to retain user-selected pipettor settings.
- Switching the unit “OFF”clears user-set programming and resets the pipettor to default settings.

Pipettor Programming

The Program Menu

1. The following five dilutions have been pre-programmed.

Mode	Dilution Ratio	Diluent Volume	Sample Volume	Total Volume
d1	1:5	4.00mL	1.00mL	5.00mL
d2	1:10	4.50mL	0.50mL	5.00mL
d3	1:20	4.75mL	0.25mL	5.00mL
d4	1:5	0.80mL	0.20mL	1.00mL
d5	1:10	0.90mL	0.10mL	1.00mL

2. Repeat Dispense 1mL Mode-

This mode performs repeat 1mL dispensing.

Mode	Volume	Repetitions
rd	1.00mL	1-5

3. Pipette Modes -

These modes perform standard 1mL and 5mL pipetting with blow-out.

Mode	Volume
P1	1.00mL
P5	5.00mL

4. Open Dilution Mode -

This mode allows selection of any dilution ratio within the range of the pipettor

Mode	Increment	Diluent Volume Range	Sample Volume Range	Max. Total Volume
d0	0.05mL	0.10-5.00mL	0.00-4.90mL.	5.00mL

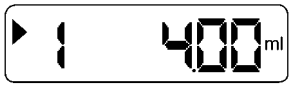
Pipettor Programming

Power "ON" Display and Startup

The display of a switched "ON" pipettor indicates that programming has been reset to default settings.

1. Switch the unit "ON". Display:

2. Press the Start Button twice. The display shows that the unit is ready for the default 1:5 dilution (Mode d1, 5mL) or for program changes.



Switching the pipettor "OFF" and then "ON" will reset the unit to the default settings (Mode d1, 1:5, 5mL dilution).

Mode Selection and Mode Recall

Selecting available modes on the pipettors is done with the use of these three keys:

1. Press M once to display the default dilution mode of the pipettor.

2. Press M repeatedly to view each of the modes available.

3. Press E when the desired mode is displayed. This will enter the mode selection and allow you to use this mode.

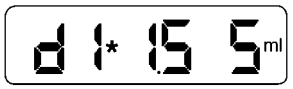
Mode recall * allows you to flip back and forth between the last two modes used.

M or * may not be used in the middle of an aspiration or dispensing cycle.

Pipettor Programming

1:5 Dilution (5mL Total Volume)

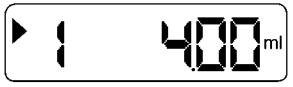
1. Press **M** repeatedly until the display reads:



2. Press **E** to enter selection.

3. Attach a pipette tip to the tip cone.

   The pipettor is now ready to begin the 1:5 dilution (5mL total volume). The display indicates that the pipettor is ready to aspirate 4.00mL.

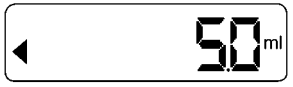


4. Place the tip in the diluent and press the Start Button. The unit will aspirate 4.00mL.

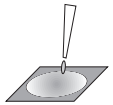
   The following display indicates that the unit is ready to aspirate 1.00mL.

5. Place the tip in the sample solution and press the Start Button to aspirate 1.00mL.

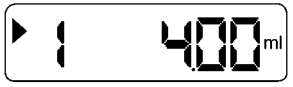
   The next display indicates that the unit is ready to dispense the total volume (5mL) with blowout.



6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.



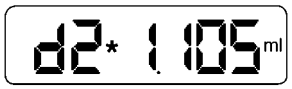
   The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the 4.00mL aspiration.



Pipettor Programming

1:10 Dilution (5mL Total Volume)

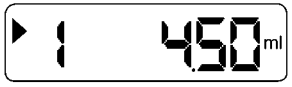
1. Press **M** repeatedly until the display reads:



2. Press **E** to enter selection.

3. Attach a pipette tip to the tip cone.

   The pipettor is now ready to begin the 1:10 dilution (5mL total volume). The display indicates that the pipettor is ready to aspirate 4.50mL.

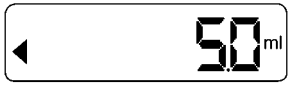


4. Place the tip in the diluent and press the Start Button. The unit will aspirate 4.50mL.

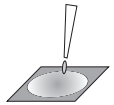
   The following display indicates that the unit is ready to aspirate 0.50mL.

5. Place the tip in the sample solution and press the Start Button to aspirate 0.50mL.

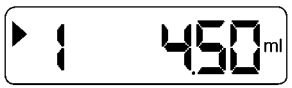
   The next display indicates that the unit is ready to dispense the total volume (5mL) with blowout.



6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.



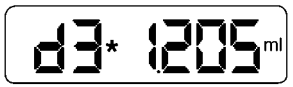
   The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the 4.50mL aspiration.



Pipettor Programming

1:20 Dilution (5mL Total Volume)

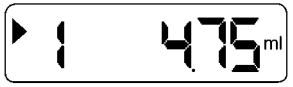
1. Press **M** repeatedly until the display reads:



2. Press **E** to enter selection.

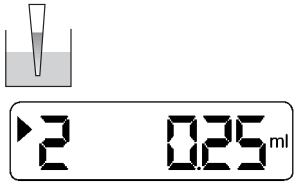
3. Attach a pipette tip to the tip cone.

   The pipettor is now ready to begin the 1:20 dilution (5mL total volume). The display indicates that the pipettor is ready to aspirate 4.75mL.



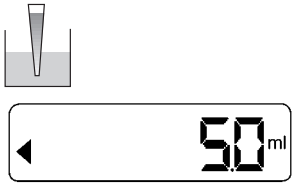
4. Place the tip in the diluent and press the Start Button. The unit will aspirate 4.75mL.

   The following display indicates that the unit is ready to aspirate 0.25mL.



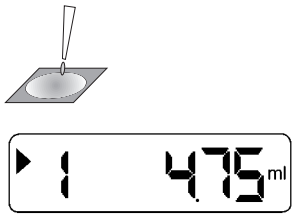
5. Place the tip in the sample solution and press the Start Button to aspirate 0.25mL.

   The next display indicates that the unit is ready to dispense the total volume (5mL) with blowout.



6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.

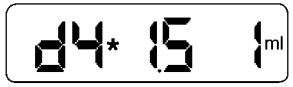
   The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the 4.75mL aspiration.



Pipettor Programming

1:5 Dilution (1mL Total Volume)

1. Press **M** repeatedly until the display reads:



2. Press **E** to enter selection.

3. Attach a pipette tip to the tip cone.

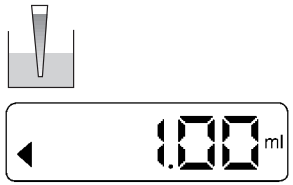
   The pipettor is now ready to begin the 1:5 dilution (1mL total volume). The display indicates that the pipettor is ready to aspirate 0.80mL.

4. Place the tip in the diluent and press the Start Button. The unit will aspirate 0.80mL.

   The following display indicates that the unit is ready to aspirate 0.20mL.

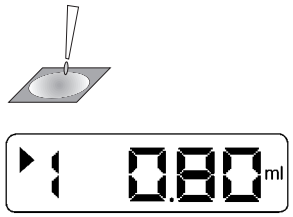
5. Place the tip in the sample solution and press the Start Button to aspirate 0.20mL.

   The next display indicates that the unit is ready to dispense the total volume (1mL) with blowout.



6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.

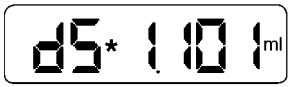
   The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the 0.80mL aspiration.



Pipettor Programming

1:10 Dilution (1mL Total Volume)

1. Press **M** repeatedly until the display reads:



2. Press **E** to enter selection.

3. Attach a pipette tip to the tip cone.

   The pipettor is now ready to begin the 1:10 dilution (1mL total volume). The display indicates that the pipettor is ready to aspirate 0.90mL.

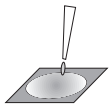
4. Place the tip in the diluent and press the Start Button. The unit will aspirate 0.90mL.

   The following display indicates that the unit is ready to aspirate 0.10mL.

5. Place the tip in the sample solution and press the Start Button to aspirate 0.10mL.

   The next display indicates that the unit is ready to dispense the total volume (1mL) with blowout.

6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.

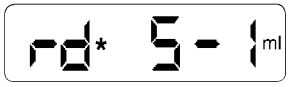


   The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the 0.90mL aspiration.

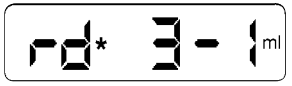
Pipettor Programming

Repeat Dispensing (1-5 repetitions of 1mL)

1. Press **M** repeatedly until the display reads:



2. Press ▲ or ▼ to select a new number of 1ml repetitions (1-5). In this case 3.



3. Press **E** to enter selection.

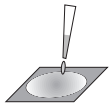
4. Attach a pipette tip to the tip cone.

   The display indicates that the pipettor is ready to aspirate 3.00mL.

5. Place the tip in the liquid and press the Start Button. The unit will aspirate 3.00mL.

   The following display indicates that the unit is ready to dispense the first of the three 1.00mL aliquots:

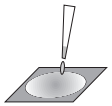
6. Position the pipette tip to dispense and press the Start Button. The unit will dispense the first 1.00mL aliquot.



   The following display indicates that unit is ready to dispense the second of the three 1.00mL aliquots:

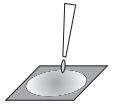
Pipettor Programming

7. Position the pipette tip to dispense and press the Start Button. The unit will dispense the second 1.00mL aliquot.



The following display indicates that unit is ready to dispense the third of the three 1.00mL aliquots.

8. Position the pipette tip to dispense and press the Start Button. The unit will dispense the third 1.00mL aliquot.



The following display indicates that unit is ready to perform a new repeat dispensing series.

9. Eject the disposable tip and repeat the series beginning with Step 4.

Pipettor Programming

1mL Pipetting

1. Press **M** repeatedly until the display reads:

2. Press **E** to enter selection.

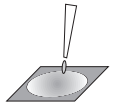
3. Attach a pipette tip to the tip cone.

The pipettor is now ready to aspirate 1.00mL.

4. Place the tip in the sample and press the Start Button. The unit will aspirate 1.00mL.

The next display indicates that the unit is ready to dispense the total volume (1mL) with blowout.

5. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.



The display now indicates that the unit is ready to repeat the 1mL pipetting, beginning with the 1.00mL aspiration.

Pipettor Programming

5mL Pipetting

1. Press **M** repeatedly until the display reads:

2. Press **E** to enter selection.

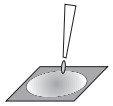
3. Attach a pipette tip to the tip cone.

   The pipettor is now ready to aspirate 5.00mL.

4. Place the tip in the sample and press the Start Button. The unit will aspirate 5.00mL.

   The next display indicates that the unit is ready to dispense the total volume (5mL) with blowout.

5. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.

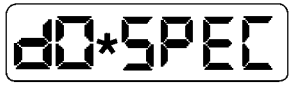


   The display now indicates that the unit is ready to repeat the 5mL pipetting, beginning with the 5.00mL aspiration.

Pipettor Programming

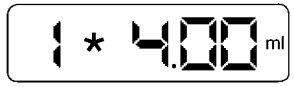
Open Dilution Programming

1. Press **M** repeatedly until the display reads:

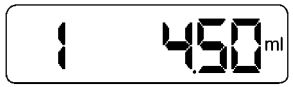


2. Press **E** to enter selection.

   The display shows the default setting for the diluent aspiration volume.



3. Press ▲ or ▼ to select a new diluent volume (0.10 - 5.00mL). (In this case 4.50mL)



4. Press **E** to enter selection.

   The display shows a default setting for the sample aspiration volume.

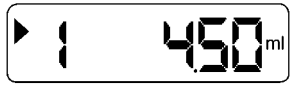
5. Press ▲ or ▼ to select a new sample volume (In this case 0.50mL)

6. Press **E** to enter selection.

Pipettor Programming

7. Attach a pipette tip to the tip cone.

   The pipettor is now ready to begin the dilution. The display indicates that the pipettor is ready to aspirate the selected diluent volume.

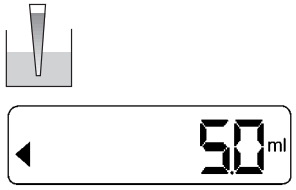


8. Place the tip in the diluent and press the Start Button. The unit will aspirate the diluent volume selected.

   The following display indicates that the unit is ready to aspirate the selected sample volume.

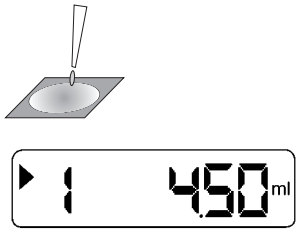
9. Place the tip in the sample solution and press the Start Button to aspirate 0.50mL.

   The next display indicates that the unit is ready to dispense the total volume with blowout.



10. Position the pipette tip to dispense and press the Start Button. The unit will dispense the full amount from the tip.

    The display now indicates that the unit is ready to repeat the dilution sequence, beginning with the diluent volume aspiration.



Pipettor Programming

Speed Selection

Speed changes are made using these four keys:

Speed "1" is slowest and Speed "5" is fastest.

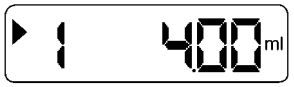
1. Press S▸ to display the aspiration speed.

2. Press ▲ or ▼ to select a new aspiration speed.

3. Press E when the desired aspiration speed is displayed. Dispensing speed is then displayed.

4. Press ▲ or ▼ to select a new dispensing speed.

5. Press E when the desired dispensing speed is displayed. The display then returns to the diluent aspiration readout.

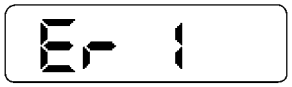


S▸ may not be used in the middle of any aspiration or dispensing cycle.

Troubleshooting

"Er 1" Display

The 3M Electronic Pipettor - 5mL has a built-in monitoring program to control the pipettor mechanism. A display showing "Er1" indicates that the pipettor has been unable to perform a function properly. Go through the following procedure to clear this display and resume pipetting.



1. Allow the pipettor to charge on the stand for a minimum of 15 minutes.

2. Press **E** to clear the error message.

   The display should now show the Power "ON" reading. If the error message remains displayed, consult your 3M representative for additional assistance.

Bubbles

The appearance of many small bubbles on the Petrifilm plate may indicate that the dispense speed is too fast. Lower the dispense speed (see Speed Selection page 20).

In more viscous samples, a single large bubble may form if the tip is allowed to contact the sample surface during dispensing. To prevent this, position the tip at least 5mm above the surface during dispensing.

"Frozen" Display

If this display is shown and the pipettor will not operate, the **S▸** has been pressed.

1. Press **E** twice to clear the display and continue working.

   See Speed Selection, page 20.

Troubleshooting

Liquid in Tip Cone

If liquid is aspirated beyond the tip cone filter, clean the tip cone as follows.

1. Switch the unit "OFF".

2. Remove the tip ejector collar: hold down the tip ejector lever and twist off the tip ejector collar.

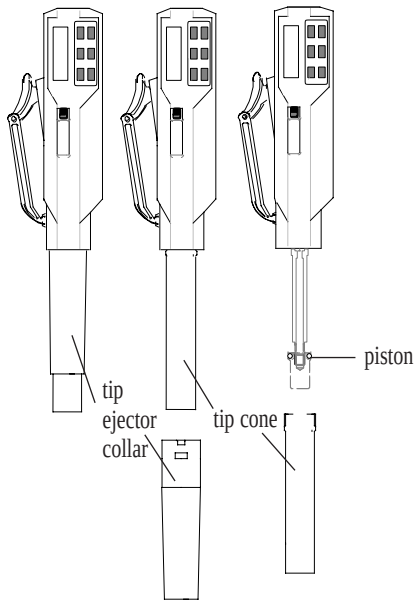
3. Unscrew the tip cone from the control handle. Do not rest the pipettor on the lab bench. Do not touch the stainless steel piston with any foreign objects to avoid scratching or contamination.

4. Use ethanol and a soft lint-free wipe to gently clean the piston and tip cone.

5. Apply a thin layer of grease to the piston seal.

   NOTE: Use only the piston grease specifically recommended by your 3M representative. Other types of grease can permanently damage the piston.

6. Reassemble the unit and perform a calibration check.



Care and Maintenance

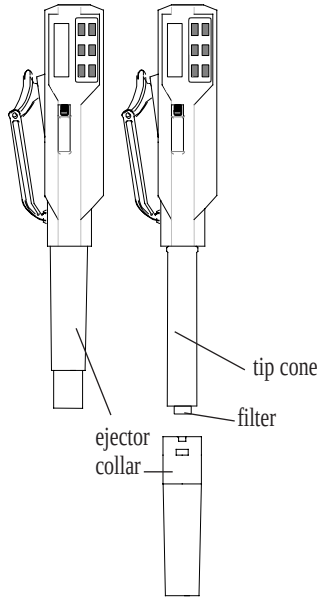
Care and Maintenance

The 3M Electronic Pipettor - 5mL requires regular cleaning to ensure trouble-free operation. Use a soft cloth lightly moistened with a mild detergent to clean the outer surface of the pipettor. **DO NOT AUTOCLAVE.**

Cleaning the Tip Cone

Monthly tip cone cleaning is recommended. However, with heavy use, clean more frequently. If liquid enters the shaft, clean tip cone immediately.

1. Switch the unit “OFF”.
2. Remove the tip ejector collar: Hold down the tip ejector lever and twist off the tip ejector collar.
3. Use a soft, lint-free wipe lightly moistened with ethanol to gently clean the tip cone.
4. Replace the tip ejector collar allowing the ejector handle connection to snap into the attachment notch of the ejector collar.



Care and Maintenance

Filter Replacement

If the pipettor is not performing due to a clogged filter or if sample fluid has contaminated the filter, the filter should be replaced.

1. Remove the contaminated or clogged filter by simply pulling it straight out of the end of the tip cone (see Figure 1).
2. Clean the outside surface and the inner filter placement surface of the tip cone using a swab moistened with ethanol (see Figure 2).

Removing Contaminated or Clogged Filter from Tip Cone

Figure 1

Cleaning the Tip Cone Before Installing New Filter

Figure 2

3. Place the pipettor in the charging stand for 15 minutes to allow drying of the tip cone.
4. Place a new filter into the tip cone (see Figure 3).

Figure 3

Battery Replacement

If the battery does not hold a sufficient charge for proper operation of the pipettor, follow these steps for replacement of the battery.

1. Switch the unit "OFF".
2. Remove the top two screws on the back of the pipettor and remove the battery cover.
3. Carefully remove the battery by lifting it straight out of the holder.
4. Install the new battery by pressing the positive (+) end against the contact spring at the bottom of the holder. Guide the negative (-) end carefully into position.
5. Replace the cover and the screws. Do not overtighten the screws.
6. Dispose of battery according to local requirements or regulations.

Calibration Check (Mode d1, 1:5, 5mL dilution)

Genuine 3M Pipettor Tips are strongly recommended for verifying pipettor performance. Perform a single-sample measurement following a change of any removable parts. Perform a 4-sample test monthly–or more frequently, depending on use. Perform a 10-sample test quarterly. Record all results and maintain records. Use the procedure indicated in “Standard Methods for the Examination of Dairy Products.”

1. The pipettor, pipettor tips and test liquid should all be allowed to adjust to room temperature (19°C-25°C) for one day before beginning the calibration check. **Note the temperature before starting.**
2. Double-rinse the pipettor tip by aspirating water to the 5.0 mL level (4.0mL + 1.0mL) and then expelling it.
3. Place a 50mL or smaller vessel containing 20-25g of distilled water onto an analytical balance. Note its weight. Re-tare balance to 0 (zero).
4. Aspirate 4.0mL of water from the vessel on the analytical balance. Note its weight. Re-tare balance to 0.
5. Aspirate an additional 1.00 mL from the vessel on the analytical balance. Note its weight. Re-tare balance to 0.
6. Expel the 5.0mL of water back into the vessel on the analytical balance. Note its weight.
7. Repeat steps 4 - 6 as desired.
8. Calculate the average weight of the 4.0mL aspirations. Repeat this calculation for the 1.00 mL and 5.0mL measurements.
9. Refer to Table 1, page 26. Find the temperature closest to the temperature you recorded during step 1. Confirm that each average weight falls within the corresponding weight tolerance range for that temperature.

Care and Maintenance

Table 1

Calibration Check Chart

1:5 Dilution Test Volume>	4.00 mL	1.00 mL	5.00 mL
Volume (mL) Tolerance Range >	3.968-4.032 mL	0.979-1.021 mL	4.945- 5.055 mL
Temperature	Weight (g) Tolerance Range*	Weight (g) Tolerance Range*	Weight (g) Tolerance Range*
19°C	3.9585 - 4.0207g	0.9767 - 1.0181g	4.9332 - 5.0409g
20°C	3.9577 - 4.0199g	0.9765 - 1.0179g	4.9322 - 5.0399g
21°C	3.9569 - 4.0191g	0.9763 - 1.0177g	4.9312 - 5.0389g
22°C	3.9557 - 4.0179g	0.9760 - 1.0174g	4.9297 - 5.0374g
23°C	3.9549 - 4.0171g	0.9758 - 1.0172g	4.9287 - 5.0364g
24°C	3.9542 - 4.0163g	0.9756 - 1.0170g	4.9278 - 5.0354g
25°C	3.9530 - 4.0151g	0.9753 - 1.0167g	4.9263 - 5.0339g
26°C	3.9522 - 4.0139g	0.9751 - 1.0164g	4.9253 - 5.0324g
27°C	3.9510 - 4.0131g	0.9748 - 1.0162g	4.9238 - 5.0314g
28°C	3.9498 - 4.0119g	0.9745 - 1.0159g	4.9224 - 5.0299g
29°C	3.9487 - 4.0107g	0.9742 - 1.0156g	4.9209 - 5.0283g
30°C	3.9475 - 4.0099g	0.9739 - 1.0154g	4.9194 - 5.0273g

** Weights adjusted for temperature and pressure effects using the “z factor”.*

Specifications

Accuracy and Precision

Test Mode: d1 1:5 (5mL) dilution

Test Action	Precision	Accuracy
Aspirate 4.00mL	+- 0.6%	+- 0.8%
Aspirate 1.00mL	+- 1.6%	+- 2.1%
Dispense 5.00mL	+- 0.8%	+- 1.1%

Tolerances

Test Action	Range
Aspirate 4.00mL	3.968 - 4.032 mL
Aspirate 1.00mL	0.979 - 1.021 mL
Dispense 5.00mL	4.945 - 5.055 mL

Materials

Part	Material
Tip Cone	Polypropylene
Ejector Collar	Polypropylene
Piston	Polypropylene
Control Handle	ABS
Tip Ejector Lever	POM

Pipettor Tips

Genuine 3M Pipettor Tips are strongly recommended for use with the 3M Electronic Pipettor - 5mL. Other tips may adversely affect the accuracy of the instrument and may damage the tip cone and ejector mechanism.

Item No.	Description
6489	5mL wide bore tip, 500/pkg, racked, sterile
6488	5mL wide bore tip, 500/pkg, racked, nonsterile
6487	5mL wide bore tip, 250/pkg, bulk, nonsterile

Limited Warranty

3M warrants that - except for depletion of the battery power or where due to product abuse, product use outside the instructions or intended applications, or reasonable wear and tear - the 3M Electronic Pipettor meets 3M's manufacturing specifications for a period of one year from the date of purchase except where prohibited by law. **3M DISCLAIMS ALL OTHER EXPRESS AND IMPLIED WARRANTIES INCLUDING BUT NOT LIMITED TO THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE.**

Limitation of Remedies:

At 3M's option, 3M will repair, replace or refund the purchase price of a 3M Electronic Pipettor that does not conform to 3M's express limited warranty above.

You must notify 3M of any suspected nonconformance in a product within 20 days after you discover it and return the nonconforming product to 3M. In the United States, please call 3M Microbiology Products Sales Management (800-328-1671) for a returned goods authorization. Outside of the United States, please contact the local 3M subsidiary.

These are your exclusive remedies except where prohibited by law. **3M WILL NOT BE LIABLE FOR ANY OTHER DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING LOST PROFITS.**

Out of Warranty Service

Contact your 3M representative for service.

For spare parts, filters, piston assembly, piston grease, or batteries contact your 3M representative.

3M

Made in Finland for

3M Microbiology Products

3M Center, Building 275-5W-05
St. Paul, MN 55144-1000
USA

CE

3M Microbiology Products

D-46325 Borken, Germany

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